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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,012

07/31/2006

Egill Jonsson

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04/09/2008

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EXAMINER

SINGH, SUNIL K

ART UNIT

PAPER NUMBER

3732

MAIL DATE

DELIVERY MODE

04/09/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,012	<b>Applicant(s)</b> JONSSON, EGILL	
	<b>Examiner</b> Sunil K. Singh	<b>Art Unit</b> 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

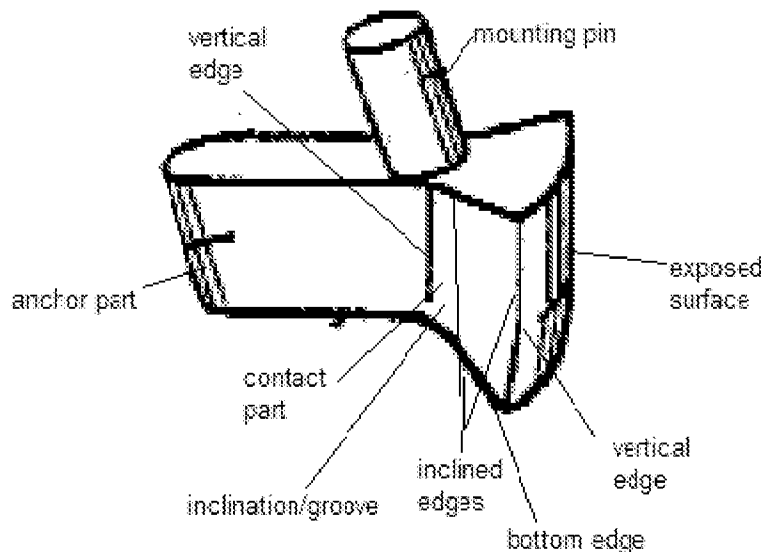
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6,10, and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hagne et al. (US 5,567,156).

Hagne et al. discloses a pre-formed tooth insert (Figs. 1 and 3) for insertion in a prepared cavity of a tooth that includes: at least one exposed surface (Figs. 1 and 3) (also see Fig. 3 that is reproduced in the figure below); a contact surface (see Fig below) forming substantially vertical edges at the junction with exposed surface (see Fig. Below); each vertical edge having a groove along at least a portion of the edge (see Fig. Below); the exposed surface comprises a surface selected from the group consisting of a proximal, mesial, proximal distal, facial and lingual surface of a tooth (Figs. 1, 3, 6); where the insert is capable of being adapted to fit a prepared proximal cavity in a tooth and capable of forming part of the proximal surface of the tooth; where the insert is capable of fitting a prepared cavity in a tooth extending to at least two outer surfaces of said tooth selected from the group consisting of proximal, lingual and/or facial surfaces (Column 4, lines 47-65); the inclinations extend from the bottom surface of the insert to a height (Fig. 3 and figure below); the insert further comprising an inclination along the vertical bottom edge of the exposed surface (Fig. 3 and Fig.

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Below); wherein at least one and preferably both of the facial and lingual sides of the insert diverges from the tooth axis such that the exposed surfaces is wider at its occlusal end than its gingival end (Fig. 3); wherein the insert is capable of being adapted to fit in at least one groove located on a surface of the prepared cavity which lies in a substantially vertical plane and on the gingival floor (Fig. 1 and 6); wherein the insert is capable of being adapted to fit into two grooves facing each other on opposite sides of the cavity in which the groove of the gingival floor extends between the gingival endpoints of two opposite substantially vertical grooves (Fig. 6) (Column 4, Lines 15-60). Hagne further discloses the method steps of repairing a tooth by use of an insert that includes: selecting an insert that is suitable for the size and location of decayed tooth tissue that needs repair; shaping a cavity into which the selected insert will fit, applying a suitable insulating material (glass ionomer) into the cavity; applying a shapeable resin material into the inclinations or grooves (Column 5, Lines 23-51); and finishing the parts of the insert that extend out the prepared cavity to thereby having a placed and secured insert in said tooth (Column 6, Lines 2-4). It is inherent to shape the resin material so that the dental insert will evenly flushed and leveled with rest of the prepared tooth. It is also inherent to allow the resin material to harden in order to provide a material that is compatible with the rest of the prepared tooth.

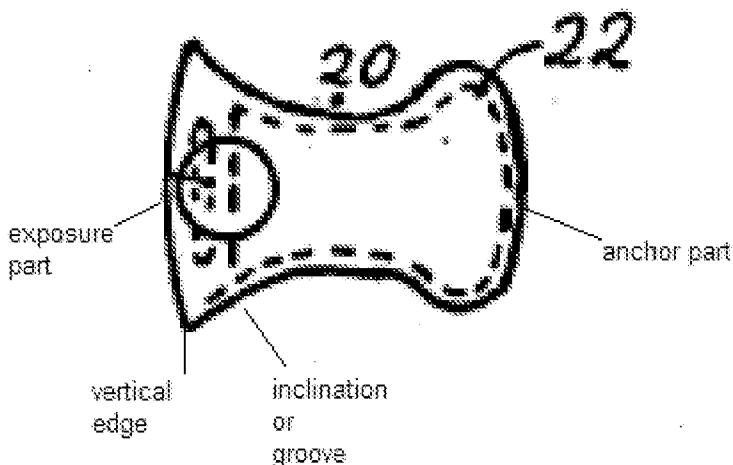


3. Claims 1-7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Dieter (DE 19812982).

Dieter discloses a discloses a pre-formed tooth insert (10) for insertion in a prepared cavity of a tooth that includes: at least one exposed surface a contact surface (see Fig 7. that is also reproduced below) forming substantially vertical edges at the junction with exposed surface (Figs. 2,3,6,7,10,11); each vertical edge having a groove along at least a portion of the edge (see Fig. Below); the exposed surface comprises a surface selected from the group consisting of a proximal, mesial, proximal distal, facial and lingual surface of a tooth (Figs. 4,8,12); where the insert is capable of being adapted to fit a prepared proximal cavity in a tooth and capable of forming part of the proximal surface of the tooth; where the insert is capable of fitting a prepared cavity in a tooth extending to at least two outer surfaces of said tooth selected from the group consisting of proximal, lingual and/or facial surfaces (Figs. 4,8,12); the inclinations extend from the bottom surface of the insert to a height (Figs. 2,6,7); the insert further

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comprising an inclination along the vertical bottom edge of the exposed surface (Fig. 2,6,10) wherein at least one and preferably both of the facial and lingual sides of the insert diverges from the tooth axis such that the exposed surfaces is wider at its occlusal end than its gingival end (Figs. 3,7,11); and where the insert (10) having an anchor part (22) opposite the exposed surface in which the anchor part (10) is wider than the center part (20) of the insert (Figs. 7,11).



### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8,9,and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagne et al. (US 5,567,156).

Hagne et al. discloses the invention substantially as claimed except for a device where: the height of the insert is in the range of about 3mm to about 10 mm; the width

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of the insert is in the range of about 2 mm to about 10 mm; and where both the facial and lingual sides of the insert diverges from the tooth axis by an angle in the range of about 1° to about 10° and preferably 2° to about 7°. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagne by including the device in the range of claimed dimensions and angles, since these parameters are deemed matters of design choice well within the skill of the ordinary artisan, obtained through routine experimentation in determining optimum results.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dieter (DE 19812982) in view of Jonsson et al. (WO 02/34154) in further view of Lee et al. (US 5,695,340).

Dieter discloses the invention substantially as claimed except for the method of repairing a tooth by use of an insert that includes the steps of: selecting an insert that is suitable for the size and location of decayed tooth tissue that needs repair; shaping a cavity into which the selected insert will fit; applying a dental adhesive to the inner surface of the cavity; placing the insert in the cavity; applying shapeable resin material (cement) into the inclinations or grooves located on the interface between the insert and the prepared cavity; shaping the resin material so as to form a continuous outer surface of the tooth with insert; allowing resin material to harden; and finishing parts of the insert that extend out of the prepared cavity to thereby having a placed and secured insert in said tooth.

Jonsson et al. teaches the method of repairing a tooth by use of an insert that includes the steps of: selecting an insert (Fig. 7a) that is suitable for the size and location of decayed tooth tissue that needs repair; shaping a cavity into which the selected insert will fit; applying a dental adhesive to the inner surface of the cavity (Page 15, Lines 25-33); placing the insert in the cavity (Fig. 7b); and finishing parts of the insert that extend out of the prepared cavity to thereby having a placed and secured insert in said tooth (Page 17, Lines 10-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Dieter by including method steps, as taught by Jonsson et al., in order to provide a method that allows a dentist to readily and quickly prepare a cavity into which a pre-formed insert will fit (Page 15, Lines 33-35). However, Dieter/Jonsson fail to disclose a method of: applying shapeable resin material (cement) into the inclinations or grooves located on the interface between the insert and the prepared cavity; shaping the resin material so as to form a continuous outer surface of the tooth with insert; allowing resin material to harden.

Lee et al. teaches a method of applying and shaping resin material (54) into the on the interface between the insert (26) and the prepared cavity (50) (Fig. 15) (Column 5, Lines 4-13) and the method step of hardening the resin material (52) (Column 5, Lines 6-7) in order to secure the occlusal insert/inlay to a bottom of the prepared tooth cavity and to the proximal insert/inlay (Abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify



Dieter/Jonsson by including the method steps, as taught by Lee et al, in order to better secure the insert to the prepared tooth cavity.

***Response to Arguments***

7. Applicant's arguments filed 01/22/2008 have been fully considered but they are not persuasive. Applicant argues that neither Hagne or Dieter discloses a groove along at least a portion of the edge. Applicant further states that the references only disclose inclined surfaces. The examiner disagrees. A groove can be defined as a long, narrow cut or indentation in a surface. The inclined surfaces will form an indent relative to the surface of the entire inlay (as shown in the Figures and the rejection above). That indentation can be considered a "groove". Applicant further argues that Hagne does not disclose a shapeable resin being applied into the inclinations/grooves. However, Hagne discloses the shapeable material being placed in the cavity and then placing the insert onto the cavity. Inlays are made and shaped so that will provide a precise fit onto the cavity. If the cavity (having the same shape of the inlay) is filled with the shapeable material, then it is inherent that the inlay's groove will contact the shapeable material since the inlay is a precise fit to the cavity. Therefore, the shapeable cement is indirectly being applied to the grooves of the inlay. Applicant further argues that Lee does not disclose applying a shapeable cement on the grooves. The examiner disagrees. Lee does in fact disclose a cement being positioned between the inlay and the cavity (see Figures and rejection above).

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunil K. Singh whose telephone number is (571) 272-3460. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris L. Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

04/01/2008

/Sunil K Singh/  
Examiner  
Art Unit 3732

/Cris L. Rodriguez/  
Supervisory Patent Examiner, Art Unit 3732